CONCEPTUAL LOGISTICS AS A FORM OF CRITICAL PEDAGOGY

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Abstract

Still carrying on today, traditional approaches to learning in higher education are centered on a procedural transfer of teachers' knowledge to their students. In order to improve old and new educational practices, a critical examination of the dominant components of the knowledge transfer process is necessary. Using the model of education advocated by Paulo Freire and others, Critical Pedagogy, the authors critique textbooks, a cornerstone of college classrooms. Their design and common use in classrooms are discussed to examine the important role textbooks play in constraining student learning. Using the liberating learning environment as a template, 34 years and 12 editions of a dominant Communication Studies textbook, *Human Communication: The Basic Course*, are interrogated to identify how authors, publishers, and faculty are misusing textbooks and the negative impact this has on learning. To address these issues, the authors propose necessary changes through a framework of liberating pedagogy employing Conceptual Logistics and powerful models of knowledge transfer.

Keywords: Conceptual Logistics, Critical Pedagogy, Textbooks, Cognitive Science, Knowledge Transfer

CONCEPTUAL LOGISTICS AS A FORM OF CRITICAL PEDAGOGY

Still carrying on today, traditional approaches to learning in higher education are centered on a procedural transfer of teachers' knowledge to their students. There is surely more variation in style and method today than in the past, but analysis of overall academic structure indicates that lectures, textbooks, and sender/receiver models are still in power. Textbooks are a dominate force in the classroom and even with the introduction of e-textbooks or other digital learning aids there is little change to the way these resources are leveraged in the learning process (deNoyelles et al., 2015; Gradydon et al., 2011; Lindshield & Adhikari, 2013), and there is evidence that this approach is not serving the academic interests of students (Arum & Roksa, 2011; Baek & Monaghan, 2013).

In order to improve educational practices, a critical examination of the dominant components of the knowledge transfer process is necessary. Accordingly, we have adapted the model of education advocated by Paulo Freire (1981), called Critical Pedagogy, as a template of a liberating learning environment. In addition, we have used Frederick Reif's detailed account of the process of knowledge transfers in his *Applying Cognitive Science to Education: Thinking and Learning in Scientific and Other Complex Domains* (2008)1 as a critical lens for analyzing their deployment in textbooks and classrooms.

Our goal in this article is to *develop a critical pedagogy for higher education classrooms*. More specifically, we embrace Freire's concept as a guiding principle and make the argument for a new, specific pedagogy, Conceptual Logistics, that is critical in nature as it attempts to address the damaging power imbalance inherent in the relationship between students, instructors, and textbook publishers. Textbooks are one part of the important connections in an increasingly complex ecosystem of critical relationships in education (Fink, 2003), and as such, we draw upon the Conceptual Logistics model (Carlson & Sosnoski, 2012) because at its core is an approach to the logistical process of wrangling various relationships and ideas together into a

cohesive learning opportunity. We critique the "banking" approach to learning using Conceptual Logistics because it is powerful and consistent with the goals of a Critical Pedagogy.

Our examination begins with an explication of our conceptual framework and statement of the underlying assumptions behind this analysis. Next, the method of Logistical Discourse Analysis is defined. Following this, we apply the method to *Human Communication: The Basic Course*, a bestselling textbook series. Finally, we make an argument for a new critical pedagogy based on the problems discovered in the analysis before concluding with applications of the new pedagogy readers can immediately apply in their own work.

CONCEPTUAL FRAMEWORK: A CRITICAL VIEW OF TEXTBOOKS

Textbooks play a crucial part in the transfer of knowledge and are a mainstay of classroom learning. This is evidenced by faculty adjusting their course content to match new book editions rather than the other way around and disrupts attempts at "learning-centered paradigms" (Fink, 2003, p. 61). In fact, as Fink (2003) points out, faculty often use a "two textbook" strategy wherein "they select one text for the students to read, usually one that is easy to grasp, and a second, more sophisticated text as a resource for their own lectures" (p. 61). They are a locus of power within academic disciplines as they set boundaries on inquiry and supply definitions students rely on throughout their studies. When Marcy Driscoll wrote *Psychology of Learning for Instruction* (2000) she sought to explain what makes a good theory of learning. The first topic she suggested analyzing was the important role textbooks play in the learning process. This is because textbooks shape students' dispositions toward learning in much the same way their earliest teachers shape children's dispositions toward learning. Unfortunately, they all too often restrict students' understanding and inhibit their creativity (Carlson & Sosnoski 2013b).

Textbooks play a central role in higher education because they are particularly good at standardizing knowledge for the sake of simplicity. Although knowledge is transferred from instructors to students, textbooks are a primary "vehicle" for conveying knowledge.

If textbooks do not set up the necessary conditions, the transfers fail or are incomplete in the multitude of courses that are designed around the use of textbooks.

Communication Studies is a foundational field in the study of human behavior and nearly ubiquitous at western universities with at least one course in the field (often public speaking or interpersonal communication) usually required of undergraduate students. This makes the field a representative sampling of higher education. Our approach to using Logistical Discourse Analysis and Conceptual Logistics in this particular case is applied to Communication Studies but can be applied to similar studies in other academic disciplines.

The textbook series chosen for analysis has proven quite marketable. Joseph A. DeVito's *Human Communication: The Basic Course* was first published in 1978 under the title *Communicology*, but changed in 1985 to the more familiar title. Twelve editions have been published during the period from 1978 to 2012. DeVito has authored several other introductory textbooks, *The Interpersonal Communication Book* (12 eds.), *Messages: Building Interpersonal Communication Skills* (6 eds.), *Essentials of Human Communication* (7 eds.), and *Interpersonal Messages: Communication and Relationship Skills* (2 eds.).

He has also authored *Brainstorms: How to Think More Creatively about Communication* (1996) and *Psycholinguistics* (1971b). He has edited several collections: *Communication: Concepts & Processes* (1971a), *Language: Concepts & Processes* (1973), and *The Communication Handbook: A Dictionary* (1986). Many of the concepts in *Human Communication: The Basic Course* also appear in the other texts as they are all closely related. In what follows, we refer to the series *Human Communication: The Basic Course* by the abbreviation, HCBC, adding the year of a specific edition when appropriate.

METHOD: LOGISTICAL DISCOURSE ANALYSIS

Discourse analysis refers to an umbrella of methods for investigating human communication. Some forms of it are designed to analyze aspects of texts such as cohesion or particular content like

medical and legal discourse. Others analyze the impact authors have upon discourses as a result of their gender, culture, or social status. Still, others examine the relations among different discourses. Critical Discourse Analysis, which can be considered an instance of critical pedagogy, critiques the structures of power embedded in texts and/or supported by them.

In his *Critical Discourse Analysis* (1995), Norman Fairclough, who is widely regarded as a leading proponent of this form of critique, describes his theoretical assumption that verbal interaction is a mode of social action presupposing social structures, situational types, language codes, and norms of language use. He also contends these structures are not only necessary conditions for action, but are also the *products* of action and therefore reproduce structures:

> The significance of the second assumption is that 'micro' actions or events including verbal interaction, can in no sense be regarded as of merely 'local' significance to the situations in which they occur, for any and every action contributes to the reproduction of 'macro' structures. … My concern here ... is with the reproduction of social structures in discourse. (Fairclough, 1995, p. 35)

In Fairclough's view, discourse produces actions which produce social structures. This is also a premise of Logistical Discourse Analysis (LDA). Our concern is with the ways in which textbooks (discourses about research concepts) produce actions (applications of those concepts) which produce social structures (commonly known as disciplines in academia) and can strongly constrain the personal identity and decision-making of a person looking to learn from or contribute to a given field.

Fairclough (1995) goes on to gloss his use of the term "critical" as the investigation of verbal interactions "with an eye to their determination by, and their effects on, social structures" (p. 38). Critical discourse analysis is necessary because this pattern is not apparent to audiences since it seems natural. He advocates "denaturalizing" opaque discourses — making visible what is opaque in them and calling attention to their social consequences. This is

the goal of LDA. *Human Communication* was chosen for analysis because, in Freire's terms, it is based on a banking theory of education. LDA makes this underlying structure visible. It reveals the discursive conditions for knowledge transfers in the textbook series and finds them not only inadequate but also instances of oppression.

LDA is based on the theory of Conceptual Logistics, which describes the ways we use, maintain, and modify our conceptions (Carlson & Sosnoski, 2012). It is a method for analyzing and making sense of changes within research discourses.2 The instructions in HCBC were compared to a template of recommendations about learning drawn from a model of learning as a cognitive process informed by cognitive science research on knowledge transformations (Reif, 2008), conceptualizing (Fauconnier & Turner, 2002; Thagard & Findlay, 2012), and from learning researchers (Ambrose, 2010; Driscoll, 2000; Fink, 2003). This is the basis of our critique of HCBC and the analysis takes place in the following section.

ANALYSIS: CRITICAL PEDAGOGY AND TEXTBOOKS

Our investigation sought to make apparent an important but too often invisible process that negotiates power in higher education courses. Since, as Paulo Freire (1981) notes, "Money is the measure of all things, and profit the primary goal" (p. 44) for owners of the modes of production, we take as our premise that the primary motive of publishing company executives is to make money. Publishers treat their publications much as TV producers treat television productions. The number of textbooks sold is the litmus test of their popularity and the textbooks selling the most copies are continued while those that draw fewer sales are discontinued. This strongly capitalist evaluation approach inherent in the current system pressures authors to replicate bestselling textbooks often elevating the demands of a publisher's marketing department above the pedagogical or educational value of the content.

As Althusser (1971) remarks, "The ultimate condition of production is … the reproduction of the conditions of production" (p. 121). One of the conditions that make textbooks marketable is their

propensity to simplify complex conceptions. Thomas Kuhn (1962) notes that the aim of educational books is persuasive and pedagogic:

> A concept of science drawn from them is no more likely to fit the enterprise that produced them than an image of a national culture drawn from a tourist brochure…To fulfill their function they need not provide authentic information about the way in which those bases were first recognized and then embraced by the profession. (p. 137)

Textbooks often "truncate" a discipline's history instead providing a simplified substitute. In the textbook industry, this scheme is the engine of profit. The continued publication of a textbook depends on its sales figures just as a television program depends upon Nielson ratings and ad sales. Sales are dependent on the simplification of complex conceptions which makes the textbooks more readable and thus more marketable. In order to continue being published, textbook authors are thereby pressured to simplify complex conceptions to the detriment of utility and accuracy. Using this scheme, textbook publishers exercise undue power over the education of undergraduates.

Our analysis shows that the conceptual changes involved in the history of Communication Studies are, to use Kuhn's (1962) term, "truncated" with limiting definitions substituted for them in HCBC. These definitions not only simplify complex conceptions, but they are also more readily memorized. The fundamental pedagogy of HCBC is memorization which makes it an instance of the "banking" conception of education that coerces students to accept "the passive role imposed on them" (Freire, 1981, p. 60), in this case, memorizing.

TEXTBOOKS AS OPPRESSORS

In his influential book, *Pedagogy of the Oppressed*, Paulo Freire (1981) describes oppression as "any situation in which 'A' objectively exploits 'B' or hinders his pursuit of self-affirmation" (p. 40). From this point of view, our study of higher education classroom strategies finds that undergraduate students are oppressed by the publishers of textbooks who "hinder" their "pursuit of self-affirmation" by building into the books memorization devices that force students to be passive

recipients of terminology, not allowing them any creativity. Freire (1981) offers an explanation of student acceptance of this situation:

> The oppressed suffer from the duality which has established itself in their innermost being... They are at one and the same time themselves and the oppressor whose consciousness they have internalized. The conflict lies in the choice between being wholly themselves or being divided; between ejecting the oppressor within or not ejecting him; between human solidarity or alienation; between following prescriptions or having choices; between being spectators or actors; between acting or having the illusion of acting through the action of the oppressor; between speaking out and being silent, castrated in their power to create and re-create, in their power to transform the world. This is the tragic dilemma of the oppressed which their education must take into account. (p. 32-33)

At first glance, it seems like this is easy to solve by simply avoiding this kind of textbook. But, the textbook ecosystem is dysfunctional because just like part of the medical system in the United States: doctors prescribe medicines they know and faculty assign books they know, drug companies have strong influence over the market just as publishers do with books, and "…students, like patients worried about their health, don't have much choice to pay up, lest they risk their grades" (Weissmann, 2013, para. 2). This dilemma is acutely experienced by many undergraduate students. Its hallmark is the prevailing ambition of students to obtain high grades, which they presume will put them in a position to obtain a high paying job. In its worst (and increasingly common) form, this type of oppression denies students a fundamental right, to make informed decisions for themselves, by stripping alternative information and competing ideas from textbooks in the name of simplicity or readability.

> The college textbook market is unusual in that the person deciding what people should buy — the professor — isn't the one actually doing the buying. It's akin to prescription drugs and suffers from many of the same excesses, with large companies vying to protect highly-profitable blockbuster products and employing legions of salespeople to influence the relatively

> small number of agents who decide what millions of consumers will buy. (Carey, 2012, para. 9)

It is less that a person or group is overtly trying to harm students; rather, a system is in place that seems rational to each participant but clearly benefits some over others. In this case, market forces encourage publishers and authors to continue producing similar editions of a given text or new titles that serve the material and teaching strategies faculty already know and like. This cycle makes it hard for instructors to choose from a variety of texts or to be exposed to new options. In the end, students are denied options and competing ideas.

Oppressors are typically persons, but in this case, the oppressor is better understood as an "apparatus."3 In this context, textbooks are the apparatuses that oppress students. HCBC allegedly presents students with representations of both an ideal researcher who understands the principles of communication and an ideal communicator. These ideal figures are, in effect, portraits of the persons they wish to emulate, which the oppressed students interpellate.4 The effect of this interpellation is to put students in a double bind. On the one hand, they are told that they ought to become like the idealized researcher, but on the other hand, they feel that what they are asked to do is not "them." However, they "are reluctant to resist, and totally lack confidence in themselves." Moreover, "They have a diffuse, magical belief in the invulnerability and power of the oppressor" (Freire, 1981, p. 50). In other words, even if a student instinctively disagrees with content in a textbook or course, she is more likely to acquiesce because "the book must be right so I must be wrong."

In *Discipline and Punish*, Michel Foucault (1977) relates this phenomenon to the power of the examination which is "… a normalizing gaze, a surveillance that makes it possible to qualify, to classify and to punish. It establishes over individuals visibility through which one differentiates them and judges them" (p. 184-185). Grades differentiate students and transcripts make their rankings visible. Grades have the capacity to make students "confess" their inadequacies by accepting their poor grades as indices of their worth. This amounts to a diffuse, magical belief in the invulnerability and power of their textbooks

Testing students on memorization of key concepts creates a conflicting effect. While they know they ought to do well on these exams in order to become the idealized researcher or communicator, they also feel that memorizing arcane concepts is not in their best interests, and yet they are compelled to *comply*.6 Joseph DeVito (2012) typically claims:

> *Human Communication: The Basic Course* is designed for the introductory college course that offers comprehensive coverage of the fundamentals of human communication. The text covers classic approaches and new developments; it covers research and theory, but gives coordinate attention to communication skills. (p. xii)

According to its author, HCBC presents students with portraits of the ideal communication researcher and the ideal communicator. However, our research shows that these portraits are implausible representations of researchers, if not of communicators. As Paul Thagard (1992) and Frederic Reif (2008) argue, conceptual blending, which involves conceptual change, is the driving force of inquiry and therefore of research. And, conceptual change is so badly represented in HCBC that it can be said not to exist. In effect, students are under the false impression that textbooks will make them into persons who can earn high salaries as communication researchers or successful communicators in corporate positions.

THE BANKING PEDAGOGY OF THE HUMAN COMMUNICATION TEXTBOOKS.

A central premise of Paulo Freire's (1981) pedagogy is that "liberating education consists in acts of cognition, not transferals of information" (p. 67). The transfer of information exercised in HCBC is an instance of "banking" pedagogy which Freire (1981) names "an instrument of oppression" (p. 5) rather than genuine learning. In his chapter on the banking concept of education in *The Pedagogy of the Oppressed*, Freire (1981) writes:

> The student records, memorizes, and repeats these phrases without perceiving what four times four really means… Education thus becomes an act of depositing in which the

> students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiqués and makes deposits which students patiently receive, memorize, and repeat. This is the banking concept of education in which the scope of action allowed to the students extends only as far as receiving, filling, and storing the deposits. (p. 57-58)

This passage describes the pedagogy implicit in HCBC. The iteration of *memorize and repeat* is the learning routine. Obviously, memory is involved in learning but memorizing does not constitute learning. In *ACSE*, Frederick Reif (2008) argues that it is an obstacle to learning — knowledge "so mindlessly remembered that it is carried out without significant thought …is thus utterly inflexible" leading to "rote performances" (p. 18).

Communication textbooks are often designed to facilitate the recall of concepts in test-taking usually including objective exercises such as multiple choice and fill-in-the-blank activities, and other devices to ensure recall. This is made obvious by various pedagogical aids: glossaries, summaries, lists of key terms, and study notes. At the end of each chapter in HCBC, a list of "KEY TERMS" is provided, in later editions with the comment that "flash cards are available online … to help you further master the vocabulary of human communication" (DeVito, 2012, p. 26). The reference to flash cards makes clear the expectation that these terms will be memorized. But, as learning theorists point out, remembering the meaning of concepts does not enable students to use them correctly. The pedagogy of HCBC which instructs students to memorize simplified conceptions of research terminologies is reductive. These textbooks are exemplary instances of the banking method of education.

CONSTRUCTING A NEW CRITICAL PEDAGOGY: CONCEPTUAL LOGISTICS

In this section, we outline and defend a new critical pedagogy called Conceptual Logistics that aims to address issues of power and imbalance highlighted in the previous section. The structure of Conceptual Logistics involves two stages. The first exposes the oppression by defining its form and function through information

learned via the Logistical Discourse Analysis. The second section addresses liberation by explicating action to be taken that will address (as much as possible) the power imbalance between students, instructors, and publishers. Thus, this pedagogy makes manifest the theoretical ideals underlying a learner-centric and critically aware approach to learning.

STAGE ONE: EXPOSING THE OPPRESSION

For Reif (1981), learning is a transformative process during which persons, usually with the assistance of instruction, change from an initial state of belief to a new state in which the acquired belief *enables them to do things they previously were not capable of* (2008).

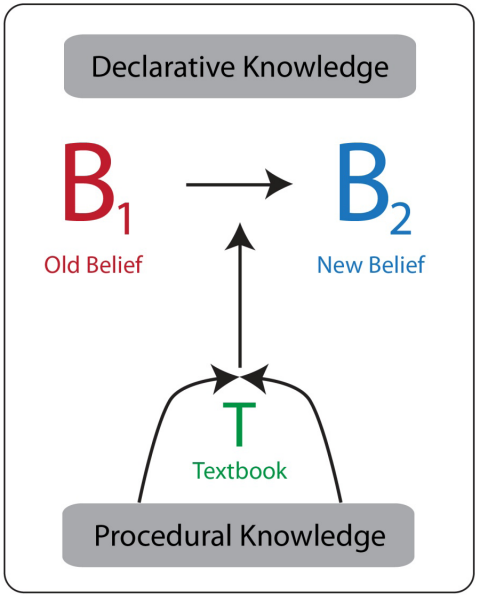

Figure 1: Adapted from Reif's Model of Learning – "Learning as a Belief Transformation"

Reif (2008) argues that learning depends upon correlating declarative knowledge (research conceptions) and procedural knowledge (the application of research concepts). *Declarative knowledge* provides factual information describing the relevant entities in the situation and their relationships. These might be prose or alternative forms such as

diagrams or mathematical formulas. *Procedural knowledge* provides methods such as describing a sequence of actions to perform particular tasks.

He goes on to show that declarative knowledge (without accompanying procedural knowledge) has numerous disadvantages — it is inflexible, can't be checked for correctness, and is cognitively uneconomical (2008). Correlatively, declarative knowledge "is meaningless if there is no possible way of determining its validity (if one does not have procedural knowledge specifying what one would actually have to do to determine whether it is true or not)" (Reif, 2008, p. 33). The two knowledge domains, declarative and procedural, according to Reif (2008) are "complementary…Each alone is inadequate without the other, and both are usually needed for good performance" (p. 35-36).

Understanding performance-requests (e.g., make me a Black Widow) requires explicit specification of the performance (add agave nectar and muddled blackberries to bold blanco tequila and garnish with a fresh basil leaf and a blackberry on a toothpick). Without specification about applying conceptions, "the student's knowledge is purely nominal (enabling merely naming some things or talking about them) rather than effectively usable (enabling the performance of significant tasks)" (Reif, 2008, p. 12-17). For example, if a student declared a triangle to be a three-sides polygon, a naïve teacher may assume the student knows what a triangle is.

> But suppose that the student is shown a sheet of paper displaying various geometric figures and is asked to point out which of them is a triangle. Or suppose that the student is asked to draw a triangle. If the student can perform neither of these tasks, would the teacher still say that the student has significant knowledge about triangles? In this case, the student's performance consists merely of his ability to *state* a verbal definition of a triangle. But if he cannot *use* this definition to do anything with it (for example, if he can neither recognize nor construct a triangle) then the student's knowledge is purely nominal rather than effectively usable. (Reif, 2008, p. 16-17)

In his view, learning occurs when a person applies a new belief to a situation with the result that he or she is then able to understand or do things not possible with previously held beliefs. It is noteworthy in this context that an extensive study of DeVito's textbook series — 12 editions — revealed that a knowledge transfer from understanding research concepts to *applying* them was uncritically assumed (See *An Introductory Textbook to the Field of Communication: A Critical Study*, 2014).

One characteristic of the 2012 edition of HCBC, for example, is that communication research concepts are paired with "applications" of them. Each chapter begins with a table in which the first column indicates "what you will learn about" (a communication research concept) and the second indicates "you'll learn to" (application of the concept). For example, Chapter 1 on "Preliminaries to Human Communication" begins with a table showing some generic pairings of declarative and procedural knowledge:

1.1 the major elements in the human communication process.	communicate with a clear understanding of the essential elements and how they relate to one another.
1.2 the essential principles that explain how communication works.	use the essential principles of human communication to increase your own effectiveness in interpersonal, small group, and public
1.3 the characteristics of the competent communicator.	begin to internalize the characteristics of communication competence

Table 1. Declarative and Procedural Pairings in HCBC

These pairings suggest a cause-effect relationship. But, the assumption that if you know the meaning of a concept, you will automatically learn how to use it is unwarranted. It cannot be assumed, for instance, that understanding what the words "computer program" refer to will automatically allow you to design computer programs. Consider the

first pairing in light of how messages are described in Chapter One of HCBC 2012:

> You send and receive messages through any one or any combination of sensory organs. Although you may customarily think of messages as being verbal (oral or written), you also communicate nonverbally. Everything about you communicates. For example, the clothes you wear and the way you walk, shake hands, tilt your head, comb your hair, sir, and smile all communicate messages.
>
> In face-to-face communication, the actual message signals (the movements in the air) are evanescent; they fade almost as they're uttered. Some written messages, especially computer-mediated messages such as those sent via e-mail, are unerasable. E-mails that are sent among employees in a large corporation, for example, are often stored on disk or tape. (DeVito, 2012, p. 10)

It is difficult to imagine how knowing this information about messages would result in a student being able to "communicate with a clear understanding" of the concepts involved. Could this account for messages prepare a student to understand that combing his hair belongs to the same conceptual domain as speaking to someone? Apart from a crash course in semiotics, students would be hard pressed to draw on their everyday experience to make the connection.

In HCBC 2012, as well as most of the textbooks in the series, the frequent "disconnects" found in the specific pairings of declarative and procedural knowledge (inaccurate representations of the sources, inappropriate applications of theoretical conceptions, and difficulties determining the declarative knowledge to be paired with skills mentioned) make any transfer of knowledge unlikely. It is rare in HCBC that the conditions which provide procedural knowledge are specified. Students, for the most part, are left to imagine what the requested performances entail.

A related problem with the pairings in this textbook is that the matches of declarative knowledge with procedural knowledge have as their contexts the everyday experiences of students. This makes

it extremely difficult for students to learn the concepts *as technical ones pertaining to communication research*. For example, a technical conception of organizations is not likely to be understood in the context of communication research if the instruction to apply it is aimed at the previous experience of 18-year-olds. Consider asking a student to apply Organizational Structuration Theory (incorporating the duality of structure, reflexive models of agency, social institutions, modalities of structure, and the dialectic of control) to their jobs at McDonald's and their experience of working at the "bottom of the ladder." Although in HCBC semantic connections are usually made between theories and skills, the specification of the procedures involved is not provided rendering the knowledge acquired "nominal."

Chapter Five of *An Introductory Textbook to the Field of Communication*: *A Critical Case Study* raises the question: how much lag is tolerable between the publication of research and its inclusion in textbooks? The chapter contains three perspectives on the issue of up-to-date coverage: the gap between the publication of major research conceptions and their inclusion in HCBC, the frequency with which concepts in the glossaries were redefined, and the currency of the concepts in the model of communication which is the framework for research in the field.

Why is an out-of-date concept a problem? The obvious answer is that using an out-of-date concept is the equivalent of using an out-of-date road map in driving from one place to another. An out-of-date map would misdirect its user. A more subtly pernicious consequence is that what currently constitutes the field of communication studies would not be disclosed. For example, students who are given the modified Shannon and Weaver 1949 model of communication not only would find its guidelines misleading in studying globalization but would also have no conception of the models of communication currently in use by communication researchers studying it.

Since it would be an immense undertaking to determine the gap between the publications of the 1,299 concepts in the 12 editions, a list of 57 "canonic" conceptions that have appeared *regularly* in recent publications on communication theory was used as a sample. While these 57 are a small percentage of total concepts, their canonic

status makes them far more relevant to our discussion here. Of the 57 canonic conceptions, HCBC covers only 19. An average of 10.2 years occurs before these 19 canonic conceptions were included in HCBC. This, of course, does not account for the fact that roughly 38 canonic conceptions never appeared. Only one canonic conception is included in HCBC that was published *after* the 1st edition in 1978. The 18 other canonic conceptions were published before 1978.

The six most prominent canonic concepts included in HCBC are agenda setting, expectancy violations, information, social exchange, social penetration, and uncertainty reduction. Of these six only two — agenda-setting and social exchange — were revised once. Changes in all six canonic conceptions occurred far more frequently during the 34 years HCBC was published — for example, agenda-setting.

Agenda-setting as a case study of the gap**.** Agenda-setting was originally formulated by Maxwell McCombs and Donald Shaw in 1972. The original theory has been revised numerous times (Rogers & Dearing, 1988; M. McCombs, 2004; McCombs & Ghanem, 2001; M. E. McCombs, 2004). DeVito's discussions of agenda-setting do not reflect the various phases of its historical development. Nor is there any discussion of the connections between agenda-setting and other communication theories such as frame analysis. DeVito's treatment of the concept of agenda setting, in our view, is characteristic of his treatment of conceptual change in general. Given the significance of conceptual change in scientific inquiries (Kuhn, 1962;Kuhn 1977; Thagard, 1992; Thagard & Findlay, 2012; Toulmin, 1972; Vosniadou, 2008), this is a serious flaw in HCBC.

In the 34 years that HCBC was published, there were likely more than 50 different re-conceptualizations of agenda-setting. In those 34 years, DeVito had 11 opportunities to update his text to incorporate this conceptual evolution of an incredibly important concept in Communication Studies and chose to do so just once. Further, the publisher found this acceptable each and every time. Given 11 chances, neither the author nor publisher of HCBC made any revisions to a central concept that had changed each year since the book's first edition. We contend this would not be considered as acceptable if the publication was a research document published for researchers

or corporate clients. But, because it is a textbook aimed at a captive audience of students, the author is able to release multiple editions without presenting changes to this rapidly evolving concept.

Throughout HCBC, the glossary definitions, once added, tend overwhelmingly to be repeated verbatim. Of the 1299 terms in the glossaries of the series, only 35 were revised after the initial entry. To underscore the extent of this disregard of conceptual change in Communication Studies we point to this staggering statistic: in 35 years, only 2% of the changes in the conceptions involved in communication research were acknowledged.

Year	Edition	Revisions
1978	1st	0
1982	2nd	1
1985	3rd	1
1988	4th	3
1991	5th	1
1994	6th	0
1997	7th	3
2000	8th	21*
2003	9th	1
2006	10th	3
2009	11th	1
2012	12th	0

Table 2. Glossary Revisions per Edition of HCBS

*The 8th edition was extensively revised.

Seven revisions were probably made for stylistic reasons. Two others omitted some wording but kept the core definition. This leaves 26 probable significant revisions of definitions in the glossaries of the entire HCBC series. From our point of view, the significance of repeating definitions is best illustrated by the concepts related to the traditional model of communication. Shannon & Weaver's 1949 model as modified by Wilbur Schramm in 1954 is the model of communication presented to students in HCBC.

The key concepts in the model are *encoder*, *decoder*, *channel*, *context*, *message*, and *noise*. The terms *channel*, *context*, and *message* have identical definitions in the glossaries of all 12 editions. The definitions of *encoder* and *decoder* shift from "that which takes a message" or "something that takes a message" to "a person or device that takes a message", then returns to "something that takes a message." The concept of *noise* changes certain features but retains a core definition in all editions.

Table 3 shows that the core definitions of these terms are retained throughout the 12 editions:

Year	Edition	Conceptions: " " same, + added, - removed					
1978	1st	encoder/decoder	context		message	noise	decoder/encoder
1982	2nd	" "	" "		" "	" "	" "
1985	3rd	" "	" "		" "	" "	" "
1988	4th	" "	" "	+ channel	" " + types	" "	" "
1991	5th	" "	" "	" "	" "	" "	" "
1994	6th	" "	" "	" "	" "	" "	" "
1997	7th	" "	" "	" "	" " + advice	" "	" "
2000	8th	" "	" "	" "	" "	" "	" "
2003	9th	" "	" "	" "	" " - advice	" "	" "
2006	10th	" "	" "	" "	" "	" "	" "
2009	11th	" "	" "	" "	" "	" "	" "
2012	12th	" "	" "	" "	" " + new advice	" "	" "

Table 3. HCBC *Core Definitions Over 12 editions*

Given these facts, we conclude that HCBC grossly misrepresents the conceptual changes that have occurred in Communication Studies through the period from 1978 to 2012. Students are provided inadequate information or even misinformation. This prevents students from making the kind of informed decisions necessary to be a researcher or practical user of communication skills, the goal outlined by the series' author.

STAGE TWO: LIBERATION

One of the themes in current research on pedagogy is that learning occurs only when students are personally engaged in the process (Ambrose, 2010; Fink, 2003; Reif, 2008; Thagard & Findlay, 2012). In his *Why Discovery Matters*, Paul Thaggard (2012), after noting that "discovery is the most exciting part of science," remarks "discovery is relevant to science education because of the need to motivate students to acquire new concepts, theories, and methods" (p. 104). Rather than ask students to mechanistically apply concepts to situations in which they have nothing at stake, Thagard's discovery-oriented approaches invites students to acquire the requisite procedural knowledge by using concepts creatively. This parallels Freire's (1981) *problem posing* approach:

> The role of the problem posing educator is to create, together with the students, the conditions under which knowledge at the level of *doxa* is superseded by true knowledge, at the level of the Logos…Whereas banking education anesthetizes and inhibits creative power, problem posing education involves a constant unveiling of reality. (p. 68)

Can a pedagogy based on teaching students how to problem solve by inventing concepts succeed in teaching them the significant concepts in their fields? The answer is a resounding yes.

In conjunction with the Society for Conceptual Logistics for Communication Research and the Institute for New Media Studies at Fort Hays State University, Gordon Carlson is developing learning projects and activities aimed at teaching complicated concepts to adult learners. Drawing on models of conceptual blending (Fauconnier

& Turner, 2002; Turner, 1997) and theories of narrative, Carlson designs processes through which students construct new concepts in communication theory by blending the salient components of other communication concepts well-established in the literature (Carlson, 2013; Carlson, 2014; Sosnoski & Carlson, 2014). This process requires students to invest in a stronger understanding of the conceptual framework undergirding the concepts they are *learning* in order to develop the new concept they are *constructing*. By marrying the pedagogical advantages of creative construction with the motive to engage the underlying principles of established concepts in literature (rather than memorizing an often vague definition from a textbook), students benefit from their self-affirming creativity while the communication research community benefits from the offerings of new communication scholars unencumbered by entrenched views on the use of concepts. The community also benefits from the types of Reusable Learning Objects (RLOs) these students generate, provide freely to the scholarly community, and can continue developing as they move from student to researcher.

Take for example this extract from a course activity presented to the Central States Communication Association Annual Conference explaining how to implement conceptual blending in the classroom:

> The activity requires students to engage the following process: (1) identify a concept from coursework *of their own choosing*; (2) select a second and seemingly unrelated concept from the coursework; (3) visualize each concept independently (they are encouraged to be creative in their approach); (4) create a third and final visualization that blends the first two concepts into a meaningful re-conceptualization of the concepts from steps (1) and (2).
>
> … The real strength of the approach comes through when students must think through each of the concepts from steps 1 and 2 in order to effectively blend them into a third. This process requires active *engagement by students at a conceptual level rarely achieved with traditional approaches*. Visualizing concepts in this blending approach forces the student to take an active role in abstraction, a non-trivial element of higher order thinking, and a

> crucial skill for those studying human communication. (Carlson, 2013, p. 1)

Carlson emphasizes visualization in his "discovery" approach to teaching communication. One of the most stunning and successful applications of this approach is a seminar he taught in which students created 3D visualizations of communication research concepts, e.g., self-disclosure, accommodation, agenda setting, networked self. His students traveled to a conference where they presented their work and an argument for the underlying theory and implementation of the project. This approach is one of liberation: "the students – no longer docile listeners – are now critical co-investigators in dialogue with the teacher" (Freire, 1981, p. 68).

CONCLUDING REMARKS

For Paulo Freire (1981), "knowledge emerges only through invention and reinvention, through the restless, impatient, continuing, hopeful inquiry men pursue in the world, with the world, and with each other" (p. 58). This remark foreshadows the observations made by Paul Thagard (2012) whose research lead to the conclusion that, "creativity results from novel combinations of representations" and is linked to discovery (p. 108). Thagard (2012) further notes that:

> …the understanding of discovery is relevant to science education because of the need to motivate students to acquire new concepts, theories, and methods. Motivation should be increased if students are not simply force-fed a stock of information to acquire, but can also get some sense of the thrill of figuring things out for themselves. (p. 104)

Creative conceptual blending needs to be introduced into classroom practices because practicing a discipline involves creative conceptualizing. Unfortunately, conceptual change is not often found on syllabi or discussed in classrooms, yet it is a major factor in teaching persons the art of inquiry. Communication research, like all other fields, is expressed in conceptual terms. We need to develop more effective ways for transferring the knowledge of researchers so bright young students can participate in the endeavor rather than merely be subject to it. A logistical Discourse Analysis

made clear there are issues of power imbalance that allow instructors and publishers to harm the group with the least power, the students. Conceptual blending is but one instantiation of a much needed critical pedagogy, Conceptual Logistics, so that issues of power balance can be addressed and student learning is improved.

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